

which the constancy¹ of the wind was more than 70 per cent, included only one month with rainfall in excess of 100 millimeters; while of the remaining 40 months (having directions within 60° of north) all but one showed more than 100 millimeters.

At Malden Island, the months with north or north-east wind had nearly five times as much rainfall as those with east and southeast. At Ocean Island, the months with resultant winds between 65° and 120° had only about one fifth of the rain that months with winds from other directions had.

A very clear relation exists between constancy of wind direction and rainfall; the greater the constancy during a given month, the less the contemporaneous rainfall. Thus at Malden Island the correlation between the two is -0.73 ; at Ocean Island it is -0.72 , which becomes -0.76 if a single month which had heavy rainfall with northeast wind (April, 1919) be excepted.

Tables are presented showing that the apparent dryness of winds from east and southeast is due largely, but by no means entirely, to their greater constancy. In other words, in this region of the equatorial Pacific, conflicting wind directions seem to be the greatest source of rain. The existence of these conflicting directions may be taken to indicate a zone of eddy motion in the atmosphere at the edge of the doldrums.—B. M. V.

551.515 (94) ——— AUSTRALIAN WINDSTORMS

A discussion on Australian hurricanes and related storms, with an appendix on hurricanes in the South Pacific, prepared by Mr. Stephen S. Visser of Indiana University and Mr. D. Hodge of the Bureau of Meteorology, Melbourne, has been issued under the direction of Mr. H. A. Hunt, Commonwealth meteorologist (Bull. No. 16, Bureau of Meteorology, Melbourne). The publication has been undertaken that all recorded data regarding the occurrence of hurricanes in Australia and the surrounding tropical waters might be available for the information of mariners and shipping interests generally. In Australia the Queensland coast is most often affected by hurricanes. In the 34 years 1890–1923 they averaged one or two a year, coupled annually with two or three storms of less severity. Four-fifths of the storms occur in the five months December to April, and two-thirds of the storms occur in January, February, and March. Most of the hurricanes which affect Queensland come from the east; many recurve near the coast and pass southward, frequently as far as Brisbane. Western Australia has, on the average, rather more than one hurricane a year. In the 52 years 1872–1923, 74 severe tropical cyclones were recorded; some years had as many as three, and one year, 1917, had five. Of the less severe types of storm, Western Australia has fewer than Queensland. The portion of Western Australia which is most frequently damaged by hurricanes lies far north of Perth. The hurricanes are most frequent in the hotter months. The Northern Territory has fewer cyclones than Queensland or Western Australia. Attempts have been made to issue long-previous predictions of hurricanes but no satisfactory result has been attained. Maps are given showing the hurricane season in different parts of Australia and the movements of the hurricanes at different seasons of the year. *Nature*, (London), February 20, 1926.

¹ "The resultant direction and 'constancy' are computed as follows: Each observation of direction is regarded as a unit vector and the resultant direction is obtained by compounding the unit vectors. The 'constancy' is represented by 100 times the ratio of the vector sum of the unit vectors to the number of observations (calms included). Direction is specified by the azimuth of the point from which the wind is blowing, and is measured in degrees from north through east."

METEOROLOGICAL SUMMARY FOR SOUTHERN SOUTH AMERICA, FEBRUARY, 1926

By Señor J. B. NAVARRETE
[El Salto Observatory, Santiago, Chile]

February was characterized by a rather stable atmospheric régime, continuing the hot period in the central zone of Chile. During the entire first decade the anticyclonic center dominated the south, with general fine weather, high temperatures and prevailingly southerly winds, which were rather heavy between the coasts of Chiloe and Arauco Provinces.

On the 12th, it rained in Chiloe, Hafo, and Raper, and on the 13th light rains extended as far at Valdivia, the most important fall being 8 millimeters at Cabo Raper.

On the 18th and 19th pressure rose in the south; on the 20th the center of the high pressure was located off Valdivia, and it rained from this point south. On the 22d the change of weather affected the central zone of Chile, with light rains and a smart fall of temperature.

From the 23d to 25th, pressure rose in the south, forming a high pressure center in the interior of the continent, with the highest pressure at Neuquen in the Argentine.

During the later days of the month, 26, 27 and 28, an important depression overlay the southern part of the continent, causing rains between Malleco and Magallanes; maximum precipitation was 20 millimeters at Cabo Raper.

At Valdivia, one of the rainiest regions of Chile, only 59.5 millimeters fell during February.—*Translation by B. M. V.*

551.506 (87) ———

METEOROLOGICAL SUMMARY FOR BRAZIL, FEBRUARY, 1926

By J. de SAMPAIO FERRAZ
[The Meteorological Office, Rio de Janeiro]

Circulation as expressed by the number of HIGHS and LOWS was slightly weaker in the month of February. Four anticyclones visited the country and although their tracks continued abnormal as of late, most of them affected northern Argentine and Matto Grosso, sending cold air to the far north, causing very likely, as we think, larger rainfall in those regions. The continental depression and the migratory LOWS of the extreme south were less active.

Rainfall was generally abundant in the north and center and below normal in the south with the exception Rio de Janeiro State and scattered points. Big floods occurred in the San Francisco River. Rio Grande do Sul continued with droughty conditions, which as explained, were caused by smaller activity of low-pressure areas and tracks of the anticyclones.

The weather in Rio de Janeiro was slightly unsettled, but with little rain. Temperature continued abnormally low, closing the summer season with an exceptionally cool month. Southerly winds were prevalent, but generally moderate.

Crops generally did well except in Rio Grande do Sul, where they suffered on account of lack of precipitation.

DR. DE SAMPAIO FERRAZ

We regret to learn of the temporary retirement of Doctor Ferraz from the directorship of the Brazilian Meteorological Service due to continued ill-health and the necessity of refraining from the onerous administrative duties of that position for several months or longer.—A. J. H.